University of Alberta

Socioemotional Selectivity Theory: Age-Related Changes in Feeling-Centered Coping

by

Andrea Catherine McEwan

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Arts

Department of Psychology

Edmonton, Alberta

Fall 2002

National Library of Canada
Acquisitions and Bibliographic Services
395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale du Canada
Acquisitions et services bibliographiques
395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-81315-0

Canada

University of Alberta

Library Release Form

Name of Author: Andrea Catherine McEwan

Title of Thesis: Socioemotional Selectivity Theory: Age-Related Changes in Feeling-Centered Coping

Degree: Master of Arts

Year this Degree Granted: 2002

Permission is hereby granted to the University of Alberta Library to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves all other publication and other rights in association with the copyright of this thesis, and except as herein before provided, neither the thesis nor any substantial portion thereof may be printed or otherwise reproduced in any material form whatever without the author's prior written permission.

Andrea McEwan

451 Heffernan Drive
Edmonton, AB T6R-1T1

Date: August 26, 2002

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Socioemotional Selectivity Theory: Age-Related Changes in Feeling-Centered Coping submitted by Andrea Catherine McEwan in partial fulfillment of the requirements for the degree of Master of Arts.

Dr. Don Kuiken

Dr. Helene Fung

Dr. Cam Wild

Date of committee approval: August 15, 2002

Acknowledgement

I would like to thank Dr. Don Kuiken for his guidance and counsel over the past 2 years. I am also grateful for the support of Dr. Helene Fung who made part of this project possible.

Thank-you to my parents, Jan and Sandy, brother, Hamish, and all my friends for not only putting up with me during this time but for believing in me. Special thanks to Ryan Itterman who helped me through the low points.

Abstract

According to socioemotional selectivity theory, temporal perspective should affect relationships between age, feeling-centered coping, and coping effectiveness. Two groups of participants; older (61-87, n=108) and younger (17-26, n=206) completed a set of questionnaires including: (1) a modified version of the Brief COPE (Carver, 1997), plus 22 feeling-centered coping items; (2) the Future Time Perspective scale (Carstensen & Lang, 1995); and (3) the Spiritual Well-being sub-scale (FACIT-Sp; Brady et al., 1999). Contrary to our predictions, age was associated with decreased use of all feeling-centered coping choices. Time perspective does play a role in these age-related differences however. For example, the inverse relationships between age and sharing/support, feeling articulation, and humour were mediated by a decrease in expansive time. Younger participants who perceive the future as foreshortened are more likely to use creative exploration. Those who cope with humour and perceive the future as foreshortened are more likely to affirm meaning/peace. Theoretical and clinical implications are discussed.

Table of Contents

I.	**Introduction**	**1**
	Time Perspective as a Mediating or Moderating Variable	2
	Support for Time Perspective as a Mediating Variable	3
	Socioemotional Selectivity Theory and Emotion-Focused Coping	6
	Age, Time Perspective, Coping Choice, and Coping Effectiveness	7
	The Present Study	10
II.	**Method**	**13**
	Participants	13
	Procedure	13
	Measures	15
III.	**Results**	**18**
	Feeling-centered Coping Factor Analysis	18
	Mediating and Moderating Models: Coping Choice	20
	Expansive Future as Mediator of the Effects of Age on Coping Choice	21
	Foreshortened Future as Mediator of the Effects of Age on Coping Choice	22
	Temporal Perspective as a Moderator of the Effects of Age on Coping Choice	23

Mediating and Moderating Models: Meaning and Peace 24

Expansive Future as a Mediator of the Effects of Coping on Meaning and Peace 24

Foreshortened Future as a Mediator of the Effects of Coping on Meaning and Peace 25

Expansive Future as Moderator of the Effects of Coping on Meaning and Peace 25

IV. Discussion 27

Age, Coping Choice and Coping Disadvantages 29

Coping Choice, Temporality and Meaning and Peace 32

The Refinement of Independent Variables 33

Conclusions 34

V. References 36

List of Tables

Table 1	Factor Loadings for Items Reflecting Different Forms of Feeling Centered Coping	18
Table 2	Means and Standard Deviations of Coping Choices for Young and Old Participants	21
Table 3	Expansive Future as a Mediator of the Effects of Age on Feeling-Centered Coping	22
Table 4	Correlations between Feeling-Centered Coping and Meaning and Peace	24
Table 5	Expansive future as a Mediator of the Effects of Coping on Meaning and Peace	25

Socioemotional Selectivity Theory: Age-Related Changes in Feeling-Centered Coping

Socioemotional selectivity theory is a life-span theory of social motivation in which the perception of time plays a central role in a person's emotional experience. The theory suggests that social motives fall into 2 general categories: those related to the acquisition of knowledge and those related to the regulation of emotion. A sense of time "running out," due to an approaching ending (including impending death), changes people's priorities, making them focus on what is emotionally significant to them. This shift in priorities may occur not only because endings cause sadness but also because endings increase appreciation for what is precious in life (Kennedy, Fung, & Carstensen, 2001). Socioemotional selectivity theory postulates that the same essential set of goals operates throughout life but that the relative importance of specific goals changes depending on whether time is perceived as expansive or constrained (Carstensen, 1992, 1995, 1998; Carstensen, Isaacowitz, & Charles, 1999). The appraisal of time plays a crucial part in the ranking and implementation of behaviors geared toward these specific goals. Knowledge-related goals help people to reach long-term goals, whereas emotion-related goals are often achieved in the moment of contact (Kennedy, et al., 2001).

Socioemotional selectivity theory asserts that time perception is fundamental to our understanding of how motives and goals vary throughout the life span. In short, when time is perceived as more limited, emotional goals come to the fore and the need for emotionally meaningful experience increases in importance (Carstensen, Gross, & Fung,

1997). The ultimate ending in life is of course death. Erikson, Erikson, & Kivnick (1989, p. 63) wrote:

"Through-out the life cycle, anticipating and planning for the future represents a kind of psychological preparation for the years of life that are expected yet to come. Although an individual life may be cut short at any moment, in childhood, youth and middle age the normative expectation is of a personal future that will last for decades. In old age, however, the duration of the future is far more uncertain. Earlier life's illusions of unlimited time are buffeted by the swelling certitude of mortality."

It is therefore plausible, according to socioemotional selectivity theory that the closer one gets to the end of life the more salient emotional goals will become.

It is important to stress, however, that although the inextricable association between time left in life and chronological age ensures age-related differences in social goals (Carstensen, et al., 1999), age per se is not the causal factor (Kennedy, et al., 2001). The realization that time is limited is what mediates the relationship between age and the pursuit of what is emotionally important (Fung, Lai, & Ng, 2001).

Time Perspective as a Mediating or Moderating Variable

The conceptual distinction between mediating and moderating variables has not been directly addressed in the discussion of socioemotional selectivity theory. A mediating variable model would propose that temporal perspective is the generative mechanism through which an independent variable (i.e., age) is able to influence a specific dependent variable (i.e., the salience of emotional goals). In contrast, a moderating variable model would suggest that temporal perspective functions to divide the independent variable (i.e., age) into subgroups (e.g., into older adults who perceive

time as constrained and older adults who perceive time as unconstrained) that establish its field of maximum effectiveness in regard to a particular dependent variable (i.e., the salience of emotional goals). In other words, moderators stipulate *when* certain effects will hold, whereas mediators illustrate *how or why* these effects occur (Baron & Kenny, 1986).

Although it is not explicit, the authors of socioemotional selectivity theory suggest that time perspective works as a mediating variable. They propose that, when endings are emphasized, people concentrate on the present rather than the future or past; in turn, this temporal shift leads to an emphasis on intuitive, subjective, and emotional goals rather than prospective, analytic, and knowledge-related goals (Carstensen, et al., 1999). The mediating model is compatible with research to date, but the present study examines the mediating and moderating effects of temporal perspective more directly.

Support for Time Perspective as a Mediating Variable

The earliest support for temporal perspective as a mediating variable applies the concept hypothetically. Increased age is *assumed* to indicate directly a constrained temporal perspective, and constraints in perceived time motivate changes in socioemotional motivation. So, evidence that social contact is generally reduced with age is of particular interest. A number of studies have shown an age-related decline in the number of relationships with emotionally insignificant partners but not with emotionally significant ones. For example, a cross-sectional comparison of social networks in a representative sample of older Germans in the Berlin Aging Study revealed that very old people had fewer social partners than their younger associates, but that they had just as many emotionally close social partners (Lang & Carstensen, 1994; Lang, Staudinger, &

Carstensen, 1998). Identical patterns were found in a sample of European and African-Americans ranging in age from 18 to 94 (Fung, Carstensen, & Lang, 2001). This pattern could have various origins, such as a lack of opportunity to meet new people, but, according to socioemotional selectivity theory, it is due to a preference for familiar social partners who are more likely to provide emotionally significant encounters. The theory suggests that this preference is due to a shift in motivation produced by a changed perception of time.

There is increasing evidence for this proposal. For example, when given a choice (and, thus, controlling for opportunity), older Americans were more likely to select familiar social partners than their younger counterparts (Fredrickson & Carstensen, 1990; Fung, Carstensen & Lutz, 1999). Similarly, when given a choice, older adults among Taiwanese and Mainland Chinese were more likely to prefer familiar social partners than were younger adults (Fung, et al., 2001). Moreover, in the latter study, time perspective was directly assessed, and it was found that older Taiwanese and Mainland Chinese perceived time as more limited than did their younger counterparts. This implies that age is, at least in some cases, associated with changes in time perspective as well as with shifts in emotional goals.

As an indication that temporal perspective, and not age per se, plays a causal role in the shift from knowledge related to emotional goals, there is evidence that, in situations where life expectancy is shortened independently of age, the same patterns arise. For example, in the preceding study of Taiwanese and Mainland Chinese persons, Mainland Chinese who as a society have a shorter life expectancy were more likely to prefer familiar social partners than were Taiwanese, regardless of age (Fung, et al., 2001).

Furthermore, in a sample of participants of similar chronological age (m age = 37) 1/3 of whom were HIV negative, 1/3 of whom were HIV positive but asymptomatic, and 1/3 of whom were HIV positive and actively experiencing symptoms of AIDS, the latter were more likely to emphasize emotional goals (Carstensen & Fredrickson, 1998).

As further evidence that time perspective is responsible for this shift in motivation, anticipated endings other than due to age or shortened life expectancy have a comparable effect on emotional goals. A study in Hong Kong that assessed time perspective and social preference before and after the take over by The People's Republic of China found that in the time-limited condition (before take-over) participants of all ages were equally likely to prefer familiar partners (Fung, et al., 1999). After the take-over, the pattern reverted to that in which older persons were more likely to prefer familiar partners.

Furthermore, an experiment in which the perception of time among younger Americans was manipulated is perhaps the most compelling evidence of the causal role of time perspective. Participants imagined that they had 30 minutes of free time and then were asked to choose one of 3 social partners with whom they wished to spend that time. When time was experimentally limited by asking participants to imagine that they were about to move across the county, i.e. when time was manipulated such that both young and old perceived a social ending to be near, both age groups chose the familiar social partner (Fredrickson & Carstensen, 1990). On the other hand, older Americans asked to anticipate that their lives will be longer than they had thought showed no preference for familiar social partners (Fung, et al., 1999). The experimental manipulation of the

perception of time indicates most directly that temporal perspective and neither age nor life expectancy causes this motivational shift towards emotional goals.

Socioemotional Selectivity Theory and Emotion-Focused Coping

Although socioemotional selectivity theory explains why individuals are more likely to pursue emotional goals, insufficient attention has been given to the nature of this change. Is it simply that higher priority is given to the pursuit of emotionally significant goals? Or, do the means by which emotional goals are pursued also change? Perhaps even the efficacy of this pursuit, the likelihood of actually achieving emotionally significant objectives, is also affected. It may be possible to address these questions by more closely examining emotional reactions to non-specific distress. Perhaps as individuals age and begin to perceive time as constrained, changes in the means by which emotional goals are pursued will be evident as adjustments in their attempts to cope with the emotional aspects of response to non-specific distress. Similarly, as individuals age and perceive time as constrained, the likelihood of actually achieving the emotional goals related to their attempts to cope with non-specific distress may be affected.

Research guided by socioemotional selectivity theory has just begun to examine whether changes in time perspective prompt changes in coping choice or coping effectiveness during emotional distress. One possibility, compatible with the mediating model, is that increasing age causes perceived temporal constraints, which, in turn, induce a shift towards emotion-focused forms of coping. For example, older people perceiving temporal constraints may be more likely to attend to, extract information from, and be persuaded by messages with emotional appeals. Some support for this hypothesis has been found in a recent study. Older persons, who presumably perceive time as more

limited, were more likely to remember information from and be persuaded by messages containing an emotional appeal (Fung, et al., 2001). These findings suggest that older people not only accentuate emotionally significant information but also, depending upon the nature of the persuasion attempt, gain a coping advantage in this shift. The present study is designed to explore such possibilities more directly.

Age, Time Perspective, Coping Choice, and Coping Effectiveness

To address more fully the age-related effects of time perspective on coping choice and coping effectiveness, it is necessary to examine developments in the coping literature. Embedded in that literature is the distinction between problem-focused and emotion-focused coping. Problem-focused coping involves direct attempts to modify the circumstances that cause distress, whereas emotion-focused coping is directed at the regulation of affect surrounding a stressful experience (Lazarus & Folkman, 1984). One possible extension of socioemotional selectivity theory is that individuals with a constrained time perspective would be more likely to choose emotion-focused coping strategies. The implications of this reasoning are troubling: a fairly consistent body of research has found emotion-focused coping to be associated with negative adjustment (Kohn, 1996). Emotion-focused coping has been associated with pessimism (Scheier, Weintraub, & Carver, 1986), as well as with negative affect and depression (Endler & Parker, 1990a). By implication, if older people were more likely to cope through emotional means, they would seem to be moving towards dysfunctional ways of coping.

On the other hand, there are three conceptual and methodological problems in this literature. First, examination of the empirical instruments used to measure coping (Stanton, Danoff-Burg, Cameron, & Ellis, 1994) indicates that many scales include a

combination of conceptually distinct forms of emotion-focused coping (Carver, Scheier, & Weintraub, 1989). Some of these emotion-focused strategies promote an approach towards the stressor whereas others promote avoidance, with potentially conflicting implications for coping effectiveness (Scheier et al., 1986). Examples are positive emotional reinterpretation and emotional disengagement, which have been shown to have quite different consequences for the reduction of distress. Correspondingly, some forms of emotion-focused coping are inversely related to each other (Scheier et al., 1986). Review of the emotion-focused coping research underlines the importance of further conceptual and methodological refinement. Moreover; socioemotional selectivity theorists might gain by examining the full diversity of emotion-focused coping strategies before asking which of them are given greater priority by people who perceive time as constrained. We take steps in that direction in the present study.

Second, recent evidence indicates that emotion-focused coping has often been assessed in a way that is associated with psychopathology. For example, Carver et al.'s (1989) Focus on and Venting of Emotions sub-scale includes items such as, "I feel a lot of distress and I find myself expressing those feelings a lot." This item combines distress, suggestive of psychopathology, with emotional expression. Stanton et al. (1994) determined that items within published scales assessing emotion-focused coping are contaminated by psychopathology. All scales examined were rated by clinical psychologists as more indicative of pathological functioning and less so of healthy functioning than a neutral anchor scale or than the authors' Emotional Approach Coping Scale, which was explicitly designed to measure emotional expression independently of complications with distress (Stanton, et al., 1994).

In this context, measures of emotion-focused coping selected for use in the study of socioemotional selectivity theory become problematic. Socioemotional selectivity theorists have emphasized the healthy functioning associated with age- and time-induced shifts toward the pursuit of emotionally significant goals (e.g., attaining emotional intimacy, recalling emotionally poignant events, resolving negative feelings). And, research to date seems to substantiate the possibility that the "emotion regulation" characteristic of older adults enables the resolution of negative feelings (Carstensen, Gottman, & Levenson, 1995; Carstensen, Pasupathi, Mayr, & Nesselroade, 2000), provides a positive affective counterpoint to negative feelings (Carstensen, et. al, 2000; Gross, Carstensen, Skorpen, Tsai, & Hsu, 1997), and leads toward self-acceptance (Carstensen, et al., 1999). Thus, this research has focused on the healthy (rather than pathological) *effects* of "emotion regulation," rather than on the coping *choices* per se. It should be kept in mind that, in some cases, apparently pathological coping choices (e.g., avoidance) provide positive emotional outcomes (e.g., the attenuation of distress). By separating emotion-focused coping choices from emotion-focused coping effects, the present study allows for such possibilities and examines a broader array of coping choice/coping effect combinations.

A third (and related) issue in the emotion-focused coping literature is the absence of scales that represent efforts to explore, understand, and express emotions surrounding the distressing event (Stanton, et al., 1994). Most surveys do not tap the several different positive aspects of emotion-focused coping. The Stanton, Kirk, Cameron, and Danoff-Burg (2000) emotional approach coping scales provide 2 distinct coping factors: emotional processing (e.g. actively attempting to acknowledge and understand emotions),

and emotional expression (e.g., allowing and taking the time for feelings to come out). Although these scales tap a wider array of emotional-approach strategies, they still seem limited in scope. Furthermore, although the Brief COPE (Carver, 1997) covers a more extensive collection of emotion-focused coping strategies it is also limited in its range. For example, there are no items assessing attempts to (1) clarify feelings through forms of intensive self-reflection, (2) examine feelings while sharing them with friends, or (3) explore feelings through creative or aesthetic activities. Studies of age- and time-related differences in emotion-focused coping should incorporate such self-reflective endeavours.

The Present Study

In response to the preceding issues, embedded in the present investigation is the development of a questionnaire designed to reflect a broader array of emotion-focused coping strategies, minimize complications with psychopathology, and differentiate coping choices from coping effects. The latter distinction between coping choice and coping effectiveness is crucial. The choice of a particular coping strategy does not ensure beneficial effects. Research testing process models linking personality, coping choice, and coping effects has shown that personality variables predict the choice of coping strategies independently of coping benefits (Aspinwall & Taylor, 1992). We postulate that coping effectiveness will be characterized by a sense of spiritual well-being. A sense of meaning and purpose implies that one is content with life and thus managing, in some way, emotions surrounding non-specific distress.

The Feeling-centered Coping Questionnaire items will be factor analyzed to identify items that can be appropriately combined to form subscales. These subscale

scores will then be used as measures of feeling-centered coping strategies in the ensuing analyses. In those analyses, we will examine both the mediating and moderating relationships between age, temporal perspective, and coping choice. We will also examine both the mediating and moderating relationships between coping choice, temporal perspective and coping effectiveness. Although socioemotional selectivity theory assumes the mediating model, there are instances in which a moderating model may be more appropriate. It is possible that certain feeling-centered coping strategies are more accessible to younger individuals. For example, because of easy access to drugs from peer acquaintances, younger—but not older—individuals with a more constrained time perspective may choose drugs as a way to avoid or mask their feelings during distress. Furthermore, some feeling-centered coping strategies, when chosen, may only be more beneficial to individuals under time limited conditions. For example, those who view the future as more limited may not only choose but also more energetically execute their chosen coping strategy, making it more effective than under temporally expansive conditions.

As a measure of temporal perspective we chose a 10-item future time perspective scale (Carstensen & Lang, 1995, as used in Fung, et al., 2001; Lang & Carstensen, 2002) that assesses an individual's perception of the future as expansive or constrained. The scale has predicted some of the outcomes predicted by socioemotional selectivity theory such as: preference for familiar social partners in time limited conditions (Fung, et al., 1999; Fung, et al., 2001); a more positive attitude towards messages with emotional appeal (Fung & Carstensen, 2001); and remembering a greater portion of information from messages with emotional significance (Fung & Carstensen, 2001). There is

evidence that the time perspective scale is comprised of two sub-scales, expansive time and foreshortened time (H. H. Fung, personal communication, June 2001), although the implications of this differentiation have not yet been examined. We explored the possibility that these two aspects of time perspective mediate or moderate different aspects of the relationships between age, coping choice, and meaning and peace.

In summary, in this study we examined the model according to which temporal perspective mediates the relationship between age and coping choice and between coping choice and meaning and peace. However, we also explored the possibility that temporal perspective moderates the effects of age on coping choice and of coping choice on meaning and peace. At this stage in the development of socioemotional selectivity theory, this exploratory strategy seemed warranted.

Method

Participants

Participants in the young adult group were 206 introductory psychology students from the University of Alberta, aged 17-26 (M= 19.00, S.D.=1.696), who participated for partial course credit. One undergraduate class consisted entirely of nursing students, who were primarily women, resulting in a higher percentage of females (75.7%) than males (24.3%) in this group. Most were Caucasian (60.3%), while the remainder were Asian (21.1%) or East-Indian (8.5%). Most younger participants reported having above average health (69.9%) with only 1 individual reporting poor health (0.5%).

Participants in the older adult group were 108 individuals, aged 61-87 (M = 73.47, S.D. = 6.797), solicited from a pool of volunteers (all 60 or more years of age) organized by researchers at the University of Alberta. Participants in this group were also predominantly female (71.7% vs. 28.3%). The vast majority were Caucasian (92.6%) and the remainder were Other (7.4%). The older group was well educated, with 94.4% having at least finished high school. The majority reported having above average health (74%) with no individuals reporting poor health.

Procedure

The younger group participated during class time within their classrooms or in small groups in rooms located within the Department of Psychology at the University of Alberta. Demographic information was assessed by a series of short questions. Individuals were asked to identify their ethnicity by checking the appropriate box. Space was provided for individuals of an ethnic origin not listed to specify their ethnicity. To assess perceived health status individuals were asked, "How would you rate your

physical health relative to the average person of your age?" (poor, bad, average, good, excellent). Participants were also asked to identify their gender and age. Participants were then asked to complete a series of questionnaires, including: (1) a modified version of the Brief COPE (Carver, 1997), supplemented with 22 feeling-centered coping items designed specifically for this study; (2) the Future Time Perspective scale (Carstensen & Lang, 1995, as used in Fung, et al., 2001; Lang & Carstensen, 2002); (3) questions assessing reasons for not expressing negative emotions (Kim & Deci, 2002); (4) the Spiritual Well-being sub-scale (FACIT-Sp; Brady et al., 1999) of the Functional Assessment of Cancer Therapy (FACT-G; Cella, et al., 1993); and (5) a series of questions assessing recent occurrences of loss and trauma. A final item assessed distress about research participation, and a short debriefing was provided.

Questionnaire packages including a comparable array of instruments were mailed to 148 eligible older participants. A stamped addressed envelope and a University of Alberta sticker were included as an incentive to return the completed package, resulting in a response rate of 73%. After providing demographic information, participants were asked to complete: (1) the same modified and supplemented version of the Brief COPE (Carver, 1997) that was given to the younger group; (2) the Future Time Perspective scale (Carstensen & Lang, 1995); (3) the Big Five Inventory (John, Donahue & Kentle, 1991); (4) the Interpersonal Relatedness sub-scale of the Chinese Assessment Inventory (Cheung, et al., 1996); (5) and the FACIT-Sp (Brady et al., 1999). A positive mood induction was included to attenuate any psychological distress associated with participation. After return of the questionnaire package, a research assistant called each participant to ask for feedback on the questionnaire package and to assess any

psychological distress that may have occurred. If participants had been upset they would have been referred to the relevant support services; however, this was not necessary for any of these participants.

For the present study, only the measures of feeling-centered coping, time perspective, and spirituality are pertinent, and these instruments are described in greater detail below.

Measures

Feeling-Centered Coping. Feeling-centered coping was assessed using a modified version of the Brief COPE (Carver, 1997) plus an additional 22 items designed specifically for this study. The original Brief COPE assesses 9 factors, each factor contains 2 items, and, in a published report, all but one had reliabilities of .60 or more (Carver, 1997). For the present study, items from the Brief COPE were modified so that they focused directly on coping strategies that might be selected, at least in part, to influence personal feelings. For example, the original item, "I have been praying or meditating," was modified to read, "I have been trying to find emotional strength through religious activities (e.g. prayer, worship)." And, the original item, "I've been doing something to think about it less, such as going to movies, watching T.V., daydreaming, sleeping or shopping," was modified to read, "I have been going to movies or watching T.V. so I wouldn't think about what was upsetting me."

After review of the literature on emotion-focused coping, an additional 22 items were developed to reflect coping choices with affective consequences. They were composed to reflect a variety of feeling-centered activities such as the clarification of feelings, the sharing of feelings, the management of feelings, etc. Sample items include,

"I have been reflecting on my feelings so that I can understand them better," "I have been helping others find their purpose in life," and "I have been telling others about my deepest feelings."

Participants were asked to complete the Feeling-Centered Coping questionnaire by gauging their response to distressing events that had occurred during the preceding 2 weeks. They were asked to rate each item using the following scale: 1 = I have not been doing this at all during the last 2 weeks; 2 = I have been doing this a little bit during the last 2 weeks; 3 = I have been doing this a moderate amount during the last 2 weeks; 4 = I have been doing this fairly often during the last 2 weeks; and 5 = I have been doing this very often during the last 2 weeks.

Time Perspective. Time perspective was measured with the10-item Future Time Perspective scale (Carstensen & Lang, 1995 as used in Fung, et al., 2001; Lang & Carstensen, 2002), with each item rated on a 5-point Likert scale (1 = very true, 5 = very untrue). Factor analysis (Principal Components, Varimax rotation) of data from the present study supported division of the Future Time Perspective scale into two sub-scales: expansive time (Cronbach's alpha = .94) and foreshortened time (Cronbach's alpha = .80). Seven items comprise expansive time. Sample items include, "My future is filled with possibilities," and "My future seems infinite to me." Three items comprise foreshortened time. Sample items include, "I have the sense time is running out."

Meaning and Peace. The affirmation of meaning and peace was assessed using the 12-item FACIT-Sp (Brady et al., 1999), with each item rated on a 5-point Likert scale (0 = not at all, 1 = a little bit, 2 = somewhat, 3 = rather often, 4 = very often). Sample items include "I feel peaceful" and "I feel a sense of purpose in my life." The overall

scale (alpha = 0.87) contains 2 sub-scales: meaning and peace (alpha = 0.81) and faith (alpha = 0.88). Attempts to assess criterion validity by Rhodes and Kristeller (2000) have yielded significant correlations between the FACIT-Sp and the FACT-G full scale, FACT-G functional and emotional well-being sub-scales, and Brief Symptom Inventory depression sub-scale (Derogatis & Melisaratos, 1983). The FACIT-Sp was also moderately correlated with the Duke Index of Religiosity (DUREL; Koenig, Parkerson, & Meador, 1997). The meaning and peace factor produces a pattern of correlations that is very similar to that produced by the full FACIT-Sp (Rhodes & Kristeller, 2000). For the purposes of the present study only the meaning and peace sub-scale was used as an outcome variable. In our judgment, the meaning and peace sub-scale indicates general spiritual well-being independently of religious beliefs and affiliation.

Results

Feeling-centered Coping Factor Analysis

Items adapted from the Brief Cope and the 22 newly developed feeling-centered coping items were factor analyzed (Principal Components, Varimax rotation), resulting in 8 factors with eigenvalues greater than one. These factors accounted for 13%, 12%, 11%, 7%, 7%, 6% and 4% (cumulatively 67%) of the total variance.

Table 1. Factor Loadings for Items Reflecting Different Forms of Feeling-centered Coping

Item Paraphrase	Feeling-Centered Coping Factors							
	I	II	III	IV	V	VI	VII	VIII
I have been telling others about my deepest feelings	.791							
I have been sharing my most intimate feelings with others	.772							
I have been trying to get emotional support from friends and relatives	.741							
I have been talking to someone who has experienced similar feelings	.678							
I have been spending most of my time with people to whom I feel very close	.571							
I have been trying to be with people who have faced similar difficulties	.539							
I have been letting out my negative feelings	.525		.422					
I have been reflecting on my feelings to understand them better		.683						
I have been trying to find meaning in situations faced		.636						
I have been identifying different aspects of my feelings		.633						
I have been learning to live with my feelings		.631						
I have been taking time to examine and clarify my feelings		.582						
I have been reminding myself of the depth of my feelings		.555						
I have been trying to see the situation in a more positive light		.486						
I have been looking for something good in what has happened		.447		.430				
I have been accepting the fact that my feelings cannot be changed		.416						
I have been pretending my feelings were different			.622					
I have been going to movies so I wouldn't think about it			.614					
I have been staying away from people who remind me of			.607					

disturbing things								
I have been letting my stress show through my actions	.418		.579					
I have been staying away from situations the brought back negative feelings			.577					
I have been trying not to show my feelings in my voice, posture etc.		.441	.544					
I have been turning to my work to take my mind off my distress		.461	.542					
I have been trying to gain sympathy and understanding of others	.528		.537					
I have been trying to be with people who help me have positive feelings		.425	.437					
I have been making fun of the situation				.773				
I have been making jokes about what has happened				.752				
I have been trying to leave my mark on this world				.552				
I have been trying to find emotional strength through religion					.880			
I have been taking comfort in my religion					.855			
I have been trying to remain faithful to my commitments and values		.409			.476			
I have been trying to help others find their purpose in life				.416	.434			
I have been exploring my feelings through creative activity						.733		
I have been exploring my feelings through my own performances						.654		
I have been trying to understand my feelings by writing						.640		
I have been reflecting on my feelings as I listen to music		.432				.449		
I have been using drugs or alcohol to ease my distress							.849	
I have been using drugs or alcohol to worry less							.834	
I have been reflecting on my feelings through reading								.694
I have been exploring my feelings through watching films, plays								.576

We created coping scales by averaging the ratings for those items with loadings greater than 0.400 on the primary factor and with no loading greater than 0.400 on any other factor. As indicated in Table 1 these scales reflect: (1) Sharing and Support (alpha = .90); (2) Feeling Articulation (alpha = .88); (3) Feeling Regulation (alpha = .81); (4) Finding Humour (alpha = .79); (5) Religious Support (alpha = .90); (6) Creative Self-Exploration (alpha = .68); (7) Drug Use (alpha = .95); and (8) Aesthetic Self-Reflection

(alpha = .69). Although this instrument is still under development, the present exploratory analysis has revealed interpretable and coherent feeling-centered coping factors.

Mediating and Moderating Models: Coping Choice

To determine whether it was necessary to control statistically for any demographic variables in the following analyses, we used one-way ANOVAs and bivariate correlations to test for associations between each potential control variable (gender, level of education, ethnicity, and health status) and each independent and dependent variable. It was not necessary to control for any of these variables.

We began by assessing evidence that the effects of age on coping choice were mediated by temporal perspective. However, as shown in Table 2, the prediction of a relationship between age and feeling-centered coping that we derived from socioemotional selectivity theory was disconfirmed. Although we expected that older persons would use feeling-centered coping choices more frequently, we found instead that older persons consistently chose these coping strategies less often than young people. Nonetheless, we proceeded to examine the possibility that these unexpected age-related changes in coping were mediated by temporal perspective.

Table 2. Means and Standard Deviations of Coping Choices for Young and Old Participants

	Mean	Standard Deviation
Sharing and Support:		
Young	2.7315 ***	0.9536
Old	1.0968	0.7702
Feeling Articulation:		
Young	2.8996 ***	0.7781
Old	1.6841	0.8913
Feeling Regulation:		
Young	2.5296 ***	0.8522
Old	0.6658	0.6444
Finding Humour:		
Young	2.2824 ***	0.9487
Old	0.7926	0.9006
Religious Support:		
Young	2.3054 ***	1.4360
Old	1.5263	1.4810
Creative Self-Exploration:		
Young	1.8342 ***	0.8141
Old	0.4929	0.6856
Drug Use:		
Young	1.5369 ***	0.9816
Old	0.0851	0.2991
Aesthetic self-reflection:		
Young	2.2882 ***	1.0169
Old	0.8602	0.9873

*** $p<.001$

Expansive Future as Mediator of the Effects of Age on Coping Choice

We first investigated the hypothesis that expansive temporal perspective mediates the effect of age on coping choice. In all cases mediation was examined as outlined by Baron and Kenny (1986). They argue that to test for mediation it is necessary to (1) regress the mediator on the independent variable, (2) regress the dependent variable on the independent variable, and (3) regress the dependent variable on both the independent variable and the mediator. For mediation to be a viable model, (A) the independent variable must predict the mediator in the first model, (B) the independent variable must predict the dependent variable in the second model, (C) the mediator must predict the

dependent variable in the third model, and (D) the effect of the independent variable on the dependent variable must be less in the third equation than in the second.

The regression of expansive temporal perspective on age (younger = 0; older = 1) was statistically significant, $F(1, 307) = 452.171$, $p<.000$. Older individuals were less likely than younger participants to perceive the future as expansive (beta = -.772), which satisfies criterion A for all coping choices (young mean = 19, std dev = 1.70; old mean = 73.47, std dev = 6.80). Also, as shown in Table 3, tests of criteria B, C, and D indicate that the perception of an expansive future plausibly mediates the negative relationship between age and the choice of three coping strategies: (1) sharing and support, (2) feeling articulation, and (3) finding humour.

Table 3. Expansive Future as a Mediator of the Effects of Age on Feeling-centered Coping

	Criterion B Age predicting coping choice	Criterion C Age + Expansive Time predicting coping choice Expansive Time beta	Criterion D Age + Expansive Time predicting coping choice Coping Choice beta
Sharing and Support	-.648***	-.273***	-.444***
Feeling Articulation	-.570***	.191**	-.429***
Finding Humour	-.597***	.262***	-.402***

*** $p<.001$
** $p<.01$

Foreshortened Future as Mediator of the Effects of Age on Coping Choice

Similarly, the regression of foreshortened time on age was statistically significant, $F(1, 307) = 15.388$, $p<.000$. Older individuals were more likely than younger participants to perceive the future as foreshortened (beta = .219), which satisfies criterion A for all coping choices. However, tests of criteria B, C, and D revealed no viable mediating models for foreshortened time.

Temporal Perspective as a Moderator of the Effects of Age on Coping Choice

We also examined the viability of models in which temporal perspective moderates the relationship between aging and coping choice. Moderation was examined in all cases as outlined by Baron and Kenny (1986), i.e., by adding the product of the moderator and the dichotomous independent variable to the regression equation. Moderator effects are indicated by a significant interaction term. Using these procedures, the moderating effect of time perspective on the relationship between age and feeling-centered coping was found for 2 coping strategies. To determine whether the younger or older populations were the source of these interactions, separate regression analyses were conducted in which each group in turn, served as the comparison group (Aiken & West, 1996, Chapter 7).

Although the interaction was not significant, there was a trend suggesting that the perception of an expansive future interacted with age to predict the use of drugs as a coping strategy, $F(1, 290) = 3.092$, $p<.080$. The exact nature of this relationship was unclear. Among younger participants there was a tendency for perception of an expansive future to be inversely related to drug use (beta = -.131, ns), whereas among older participants there was a trend in the opposite direction (beta = .083, ns).

Also, the perception of a foreshortened future interacted with age to predict the choice of creative self-exploration, $F(1, 290) = 5.416$, $p<.021$. Younger participants who perceived the future as foreshortened were more likely to use creative exploration as a coping strategy (beta = .221, $p<.002$); for older participants, that relationship was not significant (beta = -.062, ns).

Mediating and Moderating Models: Meaning and Peace

In general, perception of an expansive future was positively correlated with meaning and peace, $r=.207$, $p<.000$, and perception of a foreshortened future was negatively correlated with meaning and peace , $r=-.157$, $p<.006$. However, there was no overall difference between younger and older individuals on meaning and peace, $F(1, 308) = 3.777$, ns. Moreover, as indicated in Table 4, correlations between the coping scales and meaning and peace were statistically reliable for feeling articulation, feeling regulation, finding humour, religious support, and drug use (although not for sharing and support, creative self-exploration or aesthetic self-reflection). Given these relationships, we explored further the role of time perspective in the relationship between coping choice and meaning and peace.

Table 4. Correlations between Feeling-Centered Coping and Meaning and Peace

	Pearson r	p-value
Sharing and support	.074	ns
Feeling articulation	.134	.021
Feeling regulation	-.157	.007
Finding humour	.158	.006
Religious support	.157	.007
Creative self-exploration	.029	ns
Drug use	-.147	.011
Aesthetic self-reflection	.036	ns

Expansive Future as Mediator of the Effects of Coping on Meaning and Peace

We examined the possibility that temporal perspective mediates the relationship between coping choice and meaning and peace. Expansive time perspective was only a viable mediating variable for one feeling-centered coping strategy. As indicated in Table 5, finding humour satisfied all four of the Baron and Kenny (1986) criteria, suggesting

that the perception of the future as expansive plausibly mediated the relationship between finding humour and meaning and purpose.

Table 5. Expansive Future as a Mediator of the Effects of Coping on Meaning and Peace

	Criterion A Coping Choice predicting Expansive Time	Criterion B Coping Choice predicting Meaning & Peace	Criterion C Coping Choice + Expansive Time predicting Meaning & Peace Expansive Time beta	Criterion D Coping Choice + Expansive Time predicting meaning & peace Meaning beta
Finding Humour	..245***	.276***	.235***	.041

***<.001

Foreshortened Future as a Mediator of the Effects of Coping on Meaning and Peace

We also examined the possibility that foreshortened time mediates the relationship between coping choice and meaning and peace. Analysis of Baron and Kenny's criteria (1986) revealed no plausible mediating relationships for foreshortened time.

Expansive Future as a Moderator of the Effects of Coping on Meaning and Peace

We also examined the possibility that temporal perspective moderates the relationship between coping and meaning and peace. Moderator effects, as indicated by a significant interaction term (Baron & Kenny, 1986), were not statistically reliable for any of the models assessing the effects of perception of an expansive future on the relations between coping and meaning and peace.

On the other hand, for perception of a foreshortened future, there was evidence that the perception of a foreshortened future moderated the relationship between finding humour and meaning and purpose, $F(1, 293) = 5.212$, $p<.023$. To determine whether participants who perceived time as more or less limited were the source of this

interaction, the simple slopes 1 standard deviation above and 1 standard deviation below the mean (Aiken & West, 1996, Chapter 5) were computed. Among individuals who perceive the future as more foreshortened, those who cope by finding humour were more likely to affirm meaning and peace (beta = .331, t = 4.806, p<.000); among those who perceive the future as less foreshortened this relationship was not significant (beta = .102, t = 1.261, ns).

Discussion

Age and time perspective do seem to go together as suggested by socioemotional selectivity theory: older individuals were more likely than younger participants to perceive the future as foreshortened and less likely to perceive the future as expansive. However, in contrast to the predictions we derived from socioemotional selectivity theory, age was associated with the decreased use of all feeling-centered coping choices, at least as emotion-focused coping is measured here. This was the case even though the feeling-centered coping questionnaire developed for this study assessed a broad array of positive and negative coping strategies and differentiated coping choice from coping effects. It seems that, regardless of the positive or negative connotations of particular emotion-focused coping strategies, older people use them less than do younger individuals.

The age differences found in the use of feeling-centered coping could be due to cohort effects. Historical differences in the life experiences of the two cohorts could certainly have contributed to our findings. Alternatively, socioemotional selectivity theory may have a different domain of applicability than has been considered to date. It is possible that the areas studied in socioemotional selectivity research, such as choosing which friends to spend time with, reflecting on marital disagreements, and remembering emotional information from advertisements, represent a different area of emotional motivation than we are addressing in this study.

More specifically, the distinction between antecedent-focused regulation of emotion and response-focused emotion regulation may be important (Gross, 1998). Antecedent-focused emotion regulation refers to attempts to alter the course of emotions

before the emotion has begun to develop. Antecedent-focused coping strategies include situation selection (i.e., choosing with whom and where to spend time), situation modification (i.e., alteration of one's current environment), attention deployment (i.e., distraction), and cognitive reappraisal (i.e., positive reappraisal of situation). Response-focused emotion regulation refers to a variety of strategies that intensify, diminish, prolong or limit emotional experience, expression or physiological responses to distress.

Socioemotional selectivity theory may more aptly predict antecedent-focused than response-focused coping. The previous research supporting socioemotional selectivity theory has determined that in the course of everyday life, older participants generally report feeling less intense and less frequent negative emotions (Gross et al., 1997). Furthermore, in the studies of conversation about marital relationships, older people, in contrast to middle-aged couples, use conversational strategies that optimize emotional experiences and minimize negative emotional experiences (Carstensen, et al., 1995). This kind of daily emotional regulation may reflect the choice of antecedent-focused coping strategies. Moreover, older individuals actively engage in situation selection by choosing to spend time with emotionally close social partners with whom a positive emotional experience is likely, another form of antecedent emotional regulation. Perhaps in our examination of reactions to "distressing events" during the past two weeks, we were not assessing emotional fluctuations of this everyday, antecedent variety, but rather response-focused emotional regulation. Future research could focus on this distinction and determine whether older individuals use more forms of antecedent-focused coping, or perhaps use them more effectively.

Moreover, future research should more clearly identify the source of distress. In response to the feeling-centered focusing questionnaire, participants may have been referring to losing their jobs, the recent break-up of relationships, the death of a close friend, failing a university course, or something less severe. It is possible that the older individuals in this study were simply coping with less severe distress than younger individuals and thus using fewer coping strategies. In future research, it may be useful to assess coping with a specific, high-impact distress like cancer diagnosis.

Age, Coping Choice, and Coping Disadvantages

Nonetheless, time perspective does seem to play a role in these surprising age-related changes in coping. However, the role of time perspective appears to work to the disadvantage of older people, not to their advantage as suggested by socioemotional selectivity theory. Although the reduction in value of the beta coefficients was moderate, indicating that temporal perspective does not account completely for these associations, some relationships between age and coping choice are plausibly mediated by temporal perspective. That is, the inverse relationships between age and sharing and support, feeling articulation, and finding humour were plausibly mediated by the age-related decrease in the perception of an expansive future. Feeling articulation and finding humour are both positively related with meaning and peace such that their decreased use by older individuals, as suggested by the mediating relationship, is associated with less spiritual well-being. It is important to note that, in spite of this relationship, there was no overall difference between younger and older individuals in their affirmation of meaning and peace. Although they are not using the feeling-centered coping choices that appear to be beneficial in coping with non-specific distress, they are coping in some other way that

allows them to find spiritual well-being, such as in the selection of antecedent-focused coping strategies.

Time perspective not only seems to work to the disadvantage of older individuals when the mediating model applies, but also where the moderating relationship applies. Although the relationship was not significant, it is possible that the perception of an expansive future moderates the relationship between age and the use of drugs as a coping strategy. Further examination was inconclusive, but there was a trend suggesting that the older population may use drugs more frequently when they perceive the future as expansive. Since drug use is negatively associated with meaning and peace, this suggests that, when older individuals are more likely to choose feeling-centered strategies than younger individuals, they choose disadvantageous ones. In addition, the younger population seems to use drugs more frequently when they perceive the future as less expansive, as predicted. Perhaps younger individuals *should* perceive the future as more expansive, and older people *should* perceive it as more constrained. Clinically, this suggests that, to counteract drug and alcohol abuse, interventions could be designed to expand a younger individual's temporal perspective and constrain an older individual's temporal perspective. In the present study, the sample of older individuals was smaller than the younger individuals, which may have affected the statistical significance of our results. Perhaps a larger sample with more equal division of participants will provide clearer results.

In a second moderating relationship, younger individuals and not older ones seem to derive the beneficial effects of time perspective. The perception of a foreshortened future moderates the relationship between age and creative self-exploration such that

those who are *younger* and perceive the future as foreshortened are more likely to use creative exploration as a coping strategy. Although the younger individuals who *perceive the future as foreshortened* chose creative self-exploration, which is consistent with socioemotional selectivity theory, it remains unclear why older individuals who perceive the future as foreshortened do not choose this coping strategy as well. This could be explained by a cohort effect or, again, perhaps older individuals are simply choosing alternative coping strategies reflected in a different domain than is explained by socioemotional selectivity theory.

Nevertheless, this indicates that creative exploration may be especially relevant for young individuals with terminal or chronic illnesses who view the future as foreshortened. For example, younger age at breast cancer diagnosis is a predictor of initial psychosocial morbidity (Compass, et al., 1999; Cumming, Kieran, & Cumming, 2000). It is possible that creative exploration may improve adjustment in these younger individuals. This may explain why creative exploration in younger people is not also moderated by the perception of an expansive future. Perhaps, in individuals who view the future as expansive, an entrenched optimism about future opportunities, even while facing abbreviated life, precludes the need to explore feelings through creative media.

Although in this study we did not find creative exploration to be an effective coping strategy, other research has. One part of creative exploration that has been studied in relation to persons with serious illness is therapeutic writing. Therapeutic writing has been described in the past as the link between creative processes and therapy (Talerico, 1986) and has been identified in enabling response to change and making sense of life circumstances in turmoil. Written emotional expression tasks have significantly improved

health outcomes in healthy participants and have enhanced health in 4 outcome types; reported physical health, psychological well-being, physiological functioning, and general functioning (Smyth, 1998). Our findings suggest that these types of activity would be of particular importance for younger individuals diagnosed with cancer and other life threatening illnesses. Information of this kind would enable clinicians to structure psychological support accordingly.

Coping Choice, Temporality and Meaning and Peace

Although it appears that temporal perspective mediates the relationship between humour and meaning and peace, upon closer examination it seems that time perspective moderates the relationship between this humour and meaning and peace. The moderating relationship takes precedence in this instance because there is no main effect for finding humour when the interaction term is included. Among those who perceive the future as foreshortened, those who cope with humour are more likely to achieve a sense of spiritual well-being. This was the only moderating relationship found in the examination of the relationships between coping choice, temporal perspective and coping effectiveness. No conceptually viable mediating relationships were found.

The moderating relationship between finding humour and meaning and peace suggests that among aging populations and those who face terminal and chronic illness, i.e., among those whose temporal perspective is foreshortened, humor could be incredibly important. This is consistent with some research, although studies of the beneficial effects of humor have obtained mixed results. Popular literature and culture emphasize the importance of laughter in medicine and some research indicates that humor is an agent of therapeutic value and is useful as a communication tool that relieves stress (Pierlot &

Warelow, 1999). It is also regarded as a social "lubricant" in nurse-patient relationships (Pierlot & Warelow, 1999). Research into the physiological benefits has been more controversial. For example, some experimental research has shown some effects of exposure to comedy on several components of immunity but these results have been inconsistent (Martin, 2001). Furthermore, the use of humour as a way to mediate between diminished health and life satisfaction has not been supported by research (Celso, 1999). Perhaps, as our research suggests, this coping strategy is only effective among certain individuals. Again, further examination of these relationships is justified, as information of this kind would be helpful for medical doctors and psychologists alike in dealing with the psychological issues involving life-threatening illness.

It should be noted that women may feeling centered coping strategies more often. The majority of our sample is women, which could certainly affect these relationships. In future research it would be preferable to have a population sample with an equal balance of males and females. Perhaps these are only viable coping strategies among women.

The Refinement of Independent Variables

The emergence of 8 factors from the feeling-centered coping questionnaire is conceptually relevant in the examination of "emotion-focused coping". It indicates a wider array of feeling-centered coping strategies than has previously been considered. This scale represents an effort to explore, understand, and express emotions surrounding the distressing event (Stanton, et al., 1994). In addition, the survey taps several different positive and negative aspects of emotion-focused coping. The further examination of these domains is certainly merited.

The division of the Future Time Perspective Scale (Carstensen & Lang, 1995) into the two subscales, expansive time and foreshortened time, seems warranted. There is a trend in the results suggesting that the expansive time subscale works as a mediating variable, whereas the foreshortened time subscale works as a moderating variable. (Although there was a plausible moderating relationship of expansive time on age and drug use, this was not statistically significant.) Further examination of this possibility is appropriate. Perhaps additional research will clarify the conceptual distinction between these two interrelated aspects of temporal perspective.

Conclusions

In conclusion, contrary to our predictions derived from socioemotional selectivity theory, age was associated with a decreased use of all feeling-centered coping choices. As indicated in our assessment of mediating models, it seems that age causes a decrease in the perception of the future as expansive, which in turn is associated with less sharing and support, feeling articulation and humour. Both feeling articulation and humour are positively associated with meaning and peace such that, by implication, their decreased use is detrimental to the older population. Furthermore, it seems that among individuals who perceive the future as foreshortened, the younger population uses creative exploration more often. Although we did not find this coping strategy to be associated with meaning and peace, other research has suggested that it is positively associated with well-being (Smyth, 1998). Lastly, it seems that for those who perceive the future as foreshortened humour is positively associated with spiritual well-being. This suggests that among older individuals and those coping with terminal illness, humour will be of particular importance.

There was no overall difference between younger and older individuals in their affirmation of meaning and peace. It is possible that older individuals are simply using antecedent-focused coping strategies such that they perceive situations as less distressing. Future research could focus on the distinction between antecedent and response-focused emotion regulation to determine whether older adults are indeed using antecedent coping strategies more often, or perhaps more effectively than younger populations. Theoretically this would sharpen the conceptual domain of socioemotional selectivity theory. It also would allow clinicians to better understand the appropriate coping strategies of older, younger, and terminally or chronically ill individuals.

References

Aiken, L.S., & West, S.G. (1996). *Multiple Regression: Testing and Interpreting Interactions.* Newbury Park: Sage Publications.

Aspinwall, L. G., & Taylor, S. E. (1992). Modeling cognitive adaptation: A longitudinal investigation of the impact of individual differences and coping on college adjustment and performance. *Journal of Personality and Social Psychology, 53,* 989-1003.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Brady, M.J., Peterman, A.H., Fitchett, G., Mo, M. and Cella, D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-oncology, 8,* 417-428.

Carstensen, L.L. (1992). Social and emotional patterns in adulthood: Support of socioemotional selectivity theory. *Psychology & Aging, 7,* 331-338.

Carstensen, L.L. (1995). Evidence for a life-span theory of socioemotional selectivity. *Current Directions in Psychological Science, 4,* 151-156.

Carstensen, L.L. (1998). A life-span approach to social motivation. In J. Heckhausen C. Dweck (Eds.), *Motivation and self-regulation across the life span* (pp. 341-364). New York: Cambridge University Press.

Carstensen, L.L. & Fredrickson, B.L. (1998). Influence of HIV status and age on cognitive representations of others. *Health psychology, 17,* 494-503.

Carstensen, L. L., Gottman, J. M., & Levenson, R. W. (1995). Emotional behavior in long-term marriage. *Psychology and Aging, 10,* 140-149.

Carstensen, L., Gross, J., & Fung, H. (1997). The social context of emotion. In K. W. Schaie & M.P. Lawton (Eds.), *Annual review of gerontology and geriatrics* (Vol 17, pp. 325-352). New York: Springer publishing company.

Carstensen, L., Isaacowitz, D.M., & Turk-Charles, S.T. (1999*). Taking time seriously: A theory of socioemotional selectivity.* American Psychologist, 54, 165-181.

Carstensen, L.L. & Lang, F.R. (1995). *Future time perspective scale.* Unpublished manuscript.

Carstensen, L., Pasupathi, M., Mayr, U., & Nesselroade, J. (2000). Emotion experience in the daily lives of older and younger adults. *Journal of Personality and Social Psychology, 79,* 644-655.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International journal of behavioural medicine, 4,* 92-100.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of personality and social psychology, 59,*

Cella, D.F. (1997). *Manual of the functional assessment of chronic illness therapy (FACIT Scales) - Version 4.* Centre on outcomes, research and evaluation (CORE). Evanston Northwestern Healthcare and Northwestern University, Evanston, IL.

Cella, D. F., Tulsky, D., Gray, G., Sarafin, B., Linn, E., Bonomi, A., et al. (1993). The functional assessment of cancer therapy scale: Development and validation of the general measure. *Journal of Clinical Oncology, 11,* 570-579.

Celso, B. G. (1999). The relationship between health status, humor as a coping strategy, and life satisfaction among institutionalized older adults. *Dissertation Abstracts International, 59,* (10-B). (UMI No. 9508190).

Cheung, F. M., Leung K., Fan, R. M., Song, W. Z., Zhang, J. X., & Zhang, J. P. (1996). Development of the Chinese Personality Assessment Inventory. *Journal of Cross-Cultural Psychology, 27,* 181-199.

Compass, B. E., Stoll, M. F., Thompson, A. H., Oppedisano, G., Epping-Jordan, J. E., & Kras, D. N. (1999). Adjustment to breast cancer: Adjustment and age-related distress. *Cancer Treatment and Research, 54,* 195-203.

Cumming, C., Kieran, D., & Cumming, D. (2000). Body image in breast cancer. *Journal of the Society of Obstetricians & Gynaecologists of Canada, 22,* 935-941.

Derogatis, L., & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine, 13,* 595-605.

Endler, N. S., & Parker, J. D. A. (1990a). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology, 58,* 844-854.

Erikson, E. H., Erikson, J. M., & Kivnick, H. Q. (1989). *Vital involvement in old age.* New York, NY: Norton & Co, Inc.

Fredrickson, B.L., & Carstensen, L.L. (1990). Choosing social partners: How old age and anticipated endings make people more selective. *Psychology & Aging, 5,* 335-347.

Folkman, S., Lazarus, R. S., Pimley, D., & Novacek, J. (1987). Age differences in stress and coping processes. *Psychology and Aging, 2,* 171-184.

Fung, H. H. & Carstensen, L. L. (2001). *Age differences in advertisement preferences: The role of perceived time.* Manuscript in preparation.

Fung, H. H., Carstensen, L. L. & Lang, F. R. (2001). Age-related patterns of social relationships among African-Americans and Caucasian-Americans: Implications for socioemotional selectivity across the life span. *International Journal of Aging and Human Development, 52*, 185-206.

Fung, H.H., Carstensen, L.L., & Lutz, M.A. (1999). Influence of time on social preferences: Implications for life-span development. *Psychology and Aging, 14*, 595-604.

Fung, H.H., Lai, P., & Ng, R. (2001). Social preferences among Taiwanese and Mainland Chinese: The role of perceived time. *Psychology and Aging, 16*, 351-356.

Gross, J. L. (1998). Antecedent and response focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224-237.

Gross, J. L., Carstensen, L. L., Tsai, J., Skorpen, C. G., & Hsu, A. Y. (1997). Emotion and aging: Experience, expression and control. *Psychology and Aging, 12*, 590-599.

John, O. P. Donahue, e. M., & Kettle, R. L. (1991). *The Big Five Inventory: Versions 4a and 54 [Technical Report]*. Berkeley: University of California, Institute of Personality and Social Research.

Kennedy, Q., Fung, H.H., & Carstensen, L.L. (2001). Aging, Time Estimation, and Emotion. In S.H. McFadden R.C. Atchley (Eds*), Aging and the Meaning of Time*. New York: Springer publishing company.

Kim, Y., & Deci, E. L. (2002). Emotional self-regulation as a moderator of the relation between stress and physical symptom reports: A self determination theory perspective. Submitted manuscript.

Koenig, H., Parkerson, G., & Meador, K. (1997). Religions index for psychiatric research. *American Journal of Psychiatry, 154,* 885-886.

Kohn, P. M. (1996). On coping adaptively with daily hassles. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 181-201). New York, NY: Wiley.

Lang, F.R., & Carstensen, L.L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. *Psychology and Aging, 9,* 315-324.

Lang, F.R. & Carstensen, L.L. (2002). Time counts: Future time perspective, goals and social relationships. *Psychology and Aging, 17,* 125-139.

Lang, F.R., Staudinger, U., & Carstensen, L.L. (1998). Perspectives on socioemotional selectivity in late life: How personality and social context do (and do not) make a difference. *Journals of Gereontology: Psychosocial Science, 53,* 21-30.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* New York, NY: Springer.

Martin, R. A. (2001). Humor, laughter, and physical health: Methodological issues and research findings. *Psychological Bulletin, 127,* 504-519.

Pierlot, D., & Warelow, P. J. (1999). Whats so funny about nursing? *Contemporary Nurse, 8,* 121-127.

Rhodes, M., & Kristeller, J.L. (2000*). Reliability and Validity of the FACT-G Spiritual Well-Being scale in a community cancer population.* Paper presented at the Society of Behavioural Medicine.

Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology, 51,* 1257-1264.

Smyth, J.M. (1998). Written emotional expression: Effect sizes, outcome types, and moderating variables. *Journal of Consulting and Clinical Psychology, 66,* 174-184.

Stanton, A.L., Danoff-Burg, S., Cameron, C.L., & Ellis, A.P. (1994). Coping through emotional approach: Problems of conceptualization and confounding. *Journal of Personality and Social Psychology, 57,* 681-690.

Stanton, A.L., Kirk, S.B., Cameron, C.L., & Danoff-Burg, S. (2000). Coping through emotional approach scale construction and validation. *Journal of Personality and Social Psychology, 78,* 1150-1169.

Talerico, C. (1986). The expressive arts as a form of therapeutic experience in the field of mental health. *Journal of Creative Behaviour, 20,* 229-247.